

**REMARKS**

The Official Action dated October 18, 2004 has been read and carefully considered and the present amendment submitted to better define the present invention over the cited references.

In the Official Action, claims 1, 2, 3, 5, 6, 7-8, 9 and 13 were rejected under the judicially created doctrine of obviousness-type double patenting as begin unpatentable over certain claims of U.S. Patent 6,234,061. Claims 1, 5, 7 and 8 were also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over certain claims of U.S. Patent 6,694,861.

Terminal disclaimers are being submitted herewith to overcome both of those rejections with respect to the referenced patents.

Also in the Official Action, the Examiner rejected claims 1-13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,121,504 to Nowak in view of U.S. Patent 4,969,329 to Pullen.

Claims 1-13 were further rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,286,386 to Long in view of Pullen.

Applicant has cancelled claims 2, 3, 6, 10 and 11, without prejudice.

Applicant has amended independent claim 1. Claim 1, as amended includes a sensing system that specifically senses the position of a piston in relation to a cylinder, which is not disclosed by either the *Nowak*, *Long* or *Pullen* references. Likewise, claims 4, 9, 12 and 13, which depend from claim 1, similarly include these features which are completely missing from the *Nowak*, *Long* or *Pullen* references, and any combination thereof.

The only other independent claim, claim 7, has not been amended as it already includes a cylinder in terms of sensing the position of a piston relative therein, which is missing from *Nowak*, *Long* and *Pullen*, and any combination thereof. Claim 8, which depends from claim 7, also includes this feature.

Applicant is not contending that there is novelty in converting from rotational motion to linear motion in a transducer. However, the cited references do not disclose the use of a position sensor that is used to determine the position of a piston in relation to a cylinder, where, in effect, the device takes the linear motion of the piston moving within a cylinder, converts that linear motion to rotational movement and

then again converts, that rotational movement back to a linear motion, such that the eventual linear path of movement of a translating member is used to determine the position of the piston within a cylinder.

Both of the principle references, that of *Nowak* and *Long*, sense the position of a rotating component and do not, as conceded by the Examiner, go any further in such systems. The *Nowak* and *Long* positioning systems completely fail to teach the step of gaining additional accuracy by adding a further feature of converting the rotational motion that is sensed to linear motion and then sensing that linear movement of a translating member.

The mere fact that in other fields there is a transducer that converts rotary motion to a sensing element that moves linearly does not render the present invention obvious from a reading of *Nowak* or *Long*, even with the addition of *Pullen*. There is simply no reason or suggestion in *Nowak* or *Long* to add that further step of converting the rotational motion to linear motion and then sensing that linear motion for locating a piston in relation to a cylinder.

Applicant submits that such conversion of linear motion to rotational motion back to linear motion in determining and

sensing the position of a piston within a cylinder is both novel and unobvious over the cited references. The resort to such a transducer, such as Pullen, used in the aerospace art is not suggested in either *Nowak* or *Long* as resulting in an improvement over either of those systems.

As such, it is therefore submitted that the claims, as now amended, patentably distinguish over the *Nowak* and *Long* references, taken in view of *Pullen*. Thus, withdrawal of the rejections and an allowance of the present patent application is respectfully solicited.

In summary, Applicants respectfully submit that the instant application is in condition for allowance. Early notice to that end is earnestly solicited.

If a telephone conference would be of assistance in furthering prosecution of the subject application, applicants request that the undersigned be contacted at the number below.

If any additional fees are deemed necessary, authorization is given to charge the amount of such fee to Deposit Account No. 03-3839.

Respectfully submitted,



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